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I'm going to talk about the regulatory framework in the United States, how we deal with electronics in the legal sense, in terms of the regulatory sense, how we define it, and I'm going to talk about it from the federal government perspective. We have 50 states, some of which have more stringent requirements, and so on. I'm going to talk a little bit about that, but I'm not going to go into each of the state requirements, they vary considerably, but the federal standards themselves.

I'm going to talk about how the hazardous waste rules, because that's what the federal government controls and sets policy and regulations for is hazardous waste. Not non-hazardous waste, that's done at the state level. States again, even for hazardous waste, can create more stringent requirements. But I'm going to talk about how our hazardous waste rules in the United States apply, and in many cases, don't apply to electronics, used in obsolete electronics.

Our policy approach in the United States is that we follow the waste management hierarchy, as many countries do, actually, that is we first prefer to see reuse of materials, reuse of equipment, in this case, electronic equipment, followed by, preferentially, next would be recycling, saving energy, recovering material value out of it through recycling, and lastly, some form of disposal, whether it's incineration or landfilling of waste material. Electronics, it would generally fall to landfilling rather than incineration. Our regulatory and voluntary programs, we have multiple voluntary programs, as we mentioned previously, for example. Those programs, basically, are designed and implemented to encourage this waste management hierarchy. That is, encourage reuse first and recycling as well. Last resort is disposal. The last point here is that it's our viewpoint from looking at the science of landfills, for example, that the design of landfills and good locational characteristics, that's also very, very important, electronic waste can be safely landfilled, but looking at the waste management hierarchy, is it's not the most desired, it's the least desired. We want to see reuse and recycling.

Generally, most of what we commonly call e-waste, in the United States, in terms of its legal classification, is either non-waste, not even waste at all, or it's non-hazardous waste. This is, in part, because, to encourage use of that waste management hierarchy, reuse and recycling, we have numerous exemptions and exclusions to our hazardous waste rules to encourage those, those practices, and we're going to talk a little bit more about that.

The law in the United States that deals with hazardous waste control is called the Resource Conservation and Recovery Act. Under this law, as it is in most countries, certainly, you first have to be characterized, classified, the material as a waste before it can be considered to possibly have enough hazardous characteristics to be a hazardous waste, so it has to be a waste first, and then it could be considered, possibly, to be a hazardous waste. Under our RCRA program, we have exclusions and exemptions I had mentioned. Exclusion, by definition, means that it's not a waste. It's excluded from it even being a waste, and we'll talk about why in a moment. And then we have the exemptions, and the exemptions say that it is a waste, but it's not a hazardous waste.

Again, back to the incentives for reuse and recycle, here's a couple of them (on slide). Equipment and electronics are great examples of this, so electronic equipment that is capable of being reused is not a waste. An illustration of this is people and businesses who generate e-waste are actually not generating waste in the United States, under our law. They're generating used electronics which may be reused. It's not waste at that point. Waste occurs basically when a recycler gets the material and sorts through it and decides, "This part of this material must go to recycling." Well, then, it oftentimes becomes a waste under our legal classification, but the other material that he sorts out, he can resell or whatever, or someone can

resell for component use, for whole unit reuse, whatever, that material's not waste at all. The other concept here, you know, regulatory program, is that, even if something is a waste, it can be made a non-waste. How? Through processing of it. Through recycling of it, through sorting of it, through shredding, through adding value to the material through processing and making it therefore a more valuable material for recycling purposes, so it can become a raw material, basically, for manufacturing.

Here are (on slide) some examples of exemptions having to do with, I touched on electronics in the United States, any household waste, anything generated by a consumer is exempt from being a hazardous waste in the United States, and the reason for that is the impracticality of trying to impose a hazardous waste, regulatory control regime, on things that consumers generate in their household, and all the difficulties that would bring into trying to collect that, all that heavy handed regulation that would be involved in doing that. So all household waste in the United States is actually exempt from being a hazardous waste, some states have more stringent requirements. Scrap metal for recycling. If it's scrap metal, it's going to be recycled, it is not a hazardous waste. It has scrap metal value, not a hazardous waste. Whole circuit boards for recycling. Not a hazardous waste. Now, would they flunk the toxicity characteristic in a test? Yes, they often would, but we exempt them for purposes of encouraging recycling. Precious metals for recycling, the same sort of exemption.

Here's the list of things (on slide) that are not waste at all, legally, at the federal level, in the U.S. Materials or equipment for reuse, as I mentioned, not waste. Processed scrap metal for recycling, if you remember earlier, I talked about you can convert a waste to a non-waste through processing. Here's an example of that. The previous slide said that whole, that scrap metal, was exempt, it was a waste, but not a hazardous waste. Here, if you process it in some way, add value to it, prepare it for smelting down the road somewhere else, then you're adding value to the material, you're creating a commodity, and you now have a non-waste. Shredded circuit boards for recycling, the same kind of thinking is involved here. You've not shredded it, you've added value to it, you've prepared it for actual smelting, therefore you've created a non-waste. This is a conditional exclusion, it must be packaged to prevent release, shredding creates small particles, especially in the case of circuit boards, must be free of certain batteries as well prior to the shredding. Processed CRT glass for recycling, again, the concept of processing something and creating a commodity out of it, creating a non-waste. Intact CRTs for recycling, and partially processed CRTs for recycling, we'll talk, I've got a slide or two, CRTs in particular, I guess, here it is.

We issued a special rule for cathode ray tubes and devices containing them such as CRT monitors, computer monitors, as well as televisions. We issued a final rule on this in July 2006, it's intended to streamline the hazardous waste requirements that would otherwise apply, because cathode ray tubes, color cathode ray tubes will flunk a TCLP, a toxicity characteristic, they have a significant amount of lead in the funnel of the CRT tube, okay, so the rule is intended to streamline that, and to encourage recycling. Again, that's our theme. We want to encourage reuse, we want to encourage recycling, and we build our regulatory and voluntary programs to encourage those things. The rule is a conditional exclusion, so you have to do certain things, but if you comply with this rule and its conditions, then you do not have a waste. If you don't comply with the rule, you have a hazardous waste, and we can fully enforce the hazardous waste rules in that case. Has packaging and labeling requirements for storage and transport, and it has export requirements, which went into effect in January of 2007.

Here's, in essence, what the export requirements are (on slide). It has an exclusion, basically, for processed glass. Again, this concept of processing something, so if it's processed, ready to go into a furnace for glass-to-glass making or a lead smelter for example, then there is no notification to the other country involved in the export requirements, okay. It's ready to go direct to the furnace. And, we're finding that more and more countries around the world are taking a similar approach. Some of the Asian countries. I've got, in one of my later presentations, some slides on export markets for CRTs, we'll talk about that. But on the other hand, if it is glass that is fully processed, or processed is defined another rule, basically, then there is a notification and consent process, and this is the standard hazardous waste international notification and consent process that Basel uses, that OECD uses. From a legal perspective, we don't consider this, going through this process, CRTs, to be hazardous waste, but we're using the same process that is used quite universally and internationally, if it's unprocessed CRT, glass or whole CRTs for recycling.

This slide here addresses recycling of CRTs. This is how we address recycling of CRTs, the next slide addresses reuse, so you have an export for reuse. So exports for a reuse of intact CRTs, or perhaps, just remarketing of the, of a computer monitor, for example, because it's still useful. This involves no notification to receive in countries. This new rule does involve notification to EPA by the exporter, that they are an exporter of cathode ray tube containing devices for reuse overseas. Reuse, refurbishment, whatever. By that notification to EPA, it gives us the opportunity to go and inspect that exporter, and the exporter's also required to keep records that demonstrate that the practice, that the business that he's involved in, that is exportation of cathode ray tubes for reuse and refurbishment is legitimately reuse and refurbishment, so he must keep records that demonstrate that, so by getting this notification, we have the opportunity to go check those records and see whether it's legitimate export for reuse and refurbishment, and if it's not, we can enforce our hazardous waste rules on that export.

I've talked an awful lot about exclusions and exemptions, so the impression you get is, you know, we don't regulate electronics as hazardous waste. For the most part, that's true. When our electronics, used obsolete electronics, are hazardous waste in the United States -- there are four conditions here. The most important parts being the last two -- if it fails a hazardous waste characteristic, such as cathode ray tubes, that's one of the best examples, cathode ray tubes, as I mentioned, will fail the hazardous waste characteristic. But if they're going to reuse or recycling, we've already talked that there's exclusions and exemptions that apply. But if a business, a non-household, a business is disposing of more than about seven computer monitors, that's the second point, in terms of quantity, if they're putting in their dumpster more than about seven computer monitors, they're basically in violation of our hazardous waste requirements, and we can enforce that. So that's the clear case of when we would control some electronics as hazardous waste. Other electronics that fail the toxicity characteristic include quite a number of small portable electronic devices and, of course, I think you're aware of why the CRTs flunked, because of that lead that's in there for radiation protection to the consumer in the cathode ray tube device, but the other devices that will sometimes, or even frequently, fail the toxicity characteristic, are these very small portable devices that contain lead solder on a circuit board. Cell phones, for example, are very small devices and the percentage of that circuit board in there to the entire device is much, much larger than it would be for a desktop PC, for example, and the way that toxicity characteristic test works is basically, you grind up the whole electronic device and determine whether it's going to flunk this test.

One of the reasons that we take rather different approaches in the United States to materials such as used electronics is because our hazardous waste system, and this is true around the world, hazardous waste systems were not originally designed to deal with things like electronics. When countries have invented and created and developed their hazardous waste programs, it's to deal with industrial waste for the most part, so we're kind of force fitting the electronics and many other things, things in the United States we call universal waste into that system, so it's not a comfortable fit, we try to encourage reuse and recycling, so we tailor our regulations to encourage reuse and recycling, we tailor it to the risks involved. And I heard Arturo talk quite a bit about that earlier. So some of the small devices will also flunk the TCLP test, because of the lead solder. Over time, those devices will, use of lead will decrease, clearly, so very few devices over time will be flunking the toxicity tests.

To summarize, persons or businesses that send used electronics in the United States to recyclers who are going to sort through it and decide what can be resold or recycled, those persons and businesses are not waste generators. They're not generating waste. The reason is, because a lot of that material can be reused. Last point there, recyclers output. What does a recycler produce? He brings his materials in, he triages them, he sorts through them, he dismantles things, and so on, what does he produce? Here are the categories of what he really produces. He produces used and unused products. Actually many recyclers receive material that's unused from manufacturers, some of which can be remarketed. Sometimes manufacturers say, no, it cannot be remarketed, it must be destroyed, it must be recycled, okay. So recyclers output includes used and unused products, not waste in this case. They also produce recyclable commodities, okay, such as circuit boards, such as aluminum, steel, plastics, okay, but in our regulatory system in the U.S., some of those in some cases are non-hazardous waste, and in some cases, they're not waste. Clearly when you process them, they're not waste anymore.

Last, there are some things that are produced, batteries were mentioned before, some forms of batteries, mercury containing devices, those sorts of things, that require, have special requirements that apply, in the United States, we call them universal wastes, we have tailored a program to streamline the hazardous waste regulations for these types of materials. California considers electronics, in general, to be universal waste, for example. We don't do that at the federal level. But these are streamlined hazardous waste requirements that apply. As I mentioned, in the United States, the 50 states can be more stringent. They can regulate more things as hazardous waste, they can regulate more things as universal waste. What they really can't do, and some states do this, but where they really have no authority is on the export aspect. The exports are governed at the federal level. The states really have no authority at that level. So they can't be more stringent in terms of export requirements. Anywhere else, collection requirements, management, reuse, recycling, they can be more stringent in those sorts of things, the export area, they can't.

On my last slide, let me mention voluntary programs. I just want to mention that we, in addition to our regulatory program, we have written guidelines as well, in terms of, shall we call them best management practices, good practices for managing electronics, and they're part of the program called Plug in to E-Cycling program that Verena and Matt mentioned earlier, so they're voluntary guidelines on how to properly manage electronics. They are also mandatory for those manufacturers, network providers, and so on, that become Plug-in Partners, that commit to EPA, that they're going to a lot of promotion, for example, of recycling of their products, so it's mandatory for those, but in general, they're voluntary guidelines. These guidelines are based upon guidelines from the OECD, the Organization for Economic Cooperation and Development, Mexico is a member of the OECD, as is the United States and Canada. I'm going to touch on that in a later presentation in terms of OECD guidelines for environmentally sound management, so we use those guidelines in generating our own voluntary guidelines. As you'll see in my later discussions as well, these guidelines, like any other program for promoting good management of electronics, promotes due diligence. Due diligence meaning understanding and examining what happens to the electronics and the components and materials downstream. Where are they going? Are they being managed well? Due diligence is an essential concept to good management of used electronics. And the guidelines address export as well. And there's my contact information, and if there's any questions, I'd be happy to try to handle them.

[Audience]

Bob, you mentioned states not having authority over export. Can you comment on this. If a state or municipality, county, is contracting with a private vendor for a recycling service, and they would put various terms into that contract, would they or would they not be able to put terms regarding export into a contract?

[Bob Tonetti]

I'm not an attorney -- I think the answer is they could probably do that in that case, but if that had applicability generally to the state as a whole, I think they might run into some problems in that sort of thing. You know, the state can go as far as they want until they face a lawsuit, perhaps, but the case history on states trying to set what's considered to be foreign policy is very clear, and the Supreme Court decisions are very clear. That responsibility and that authority lies with the President and the Congress for setting foreign trade policy.

[Audience]

So you're saying it's really an ambiguous area. There are gradations from a contract that are required, scheme, under a new waste law, and on up, you're saying it's just ambiguous.

[Bob Tonetti]

I would suspect so, yes, and it would only be, more would be learned if there were tests, legal tests of it and so on. I do think that, in the case of the governor of Washington, who vetoed the portion of the e-waste legislation in the state of Washington, she vetoed that portion that had to do with exports and said explicitly that the state doesn't have the authority, legal authority to do that. I think she made the right decision.

[applause]